

Hazardous Waste Management Commission Report

October through December 2009

Quarterly Report

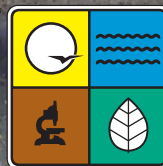
This underground storage tank project is funded by:



TRANSFORM MISSOURI
AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Many underground storage tank sites across Missouri are benefitting from the Tanks section distribution of ARRA Funds

Hazardous Waste Management Commissioners

James T. "Jamie" Frakes, Chair

Andrew Bracker, Vice-Chair

Elizabeth Aull

Michael R. Foresman

Charles Adams

"The goal of the Hazardous Waste Program is to protect human health and the environment from threats posed by hazardous waste."

For more information

Missouri Department of Natural Resources

Hazardous Waste Program

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**Missouri Department of Natural Resources
Hazardous Waste Program**

October 2009 Program Update

I would like to take this opportunity to welcome Charles Adams and Michael Foresman to the Hazardous Waste Management Commission. As evidenced by their previous accomplishments and from conversations with both, I am certain they will be a valuable addition to the commission.

One reoccurring topic in this quarterly report is lead. Historical mining and milling practices, use of mine spoils, older buildings with lead-based paint, resource recovery facilities and the \$.50 lead-acid battery fee are all ways lead has an effect on our program.

The pages devoted to this topic in no way capture how big a topic this is for the Missouri Department of Natural Resources. The Superfund section often deals with the legacy left behind from historical lead production. The Permits section deals with the current use of lead in Missouri's businesses and other sections deal with site cleanups across the state that involve the cleanup or stabilization of lead to reduce the health threats.

Outreach is an important aspect of the Hazardous Waste Program's activities. While not always a requirement, we feel it is essential to help our citizens and business remain informed on what we do, why we do it and how the regulated community, landowners and regular Missourians can help us in the process with various decisions. In this report, we included a portion on our Federal Facilities section detailing their efforts to work with a TV station on a story about the department's involvement with Missouri's Minuteman II Missiles. We hope stories like this help to develop a broader understanding of the diverse issues handled by department staff.

One of the recent top priorities of our state, this department and our program is to ensure timely and effective use of available resources through the American Recovery and Reinvestment Act. As their part in this report explains, the Tanks section received more than \$3 million in Federal funds to use to assist communities with the assessment and cleanup of former underground storage tanks facilities. Future redevelopment of the sites can spur the creation of jobs, expand existing businesses, create new businesses and clear the way for communities to redevelop and reuse these properties.

Also included in this report are some words of encouragement and advice from a former Hazardous Waste Management Commissioner, Norella Huggins. She made an impact in many of our personal lives and the lives of Missourians with her dedication to her role as commissioner.

I hope you find this quarterly report useful, educational and, with the help of Norella's comments and examples of the work hazardous waste program staff perform, inspirational. I know I do.

Thank you,



Robert Geller

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Hazardous Waste Management Commission

The Hazardous Waste Management Commission's mission is important and clearly defined. Roles and responsibilities for the commission are detailed in the Code of State Regulations, available online at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp.

The commission's rulemaking powers are enabled by statutory provisions in sections 260.365, 260.370, 260.400 and 260.437, RSMo. Sections 260.350–260.480, RSMo describe additional duties of the commission, the department and regulated persons.

Responsibilities of the Commission Members

The duties of the commission, as stated in the department's Hazardous Waste Management Commission fact sheet, are as follows:

- Encourage efforts to treat, recycle, detoxify, incinerate or otherwise treat hazardous waste to be disposed of in the state of Missouri.
- Categorize hazardous waste by taking into account toxicity, persistence and degradability in nature, potential for accumulation in tissue, and other related factors such as flammability, corrosiveness and other hazardous characteristics.
- Categorize wastes by disposal method including, but not limited to, treatment facilities, incinerators, landfills, landfarms, storage facilities, surface impoundments, recycling, reuse and reduction.
- Determine fees to be paid to the department by owners or operators of hazardous waste facilities who have obtained or are required to obtain a hazardous waste facility permit.
- Develop standards, rules and regulations to implement, enforce and carry out the provisions of sections 260.350 to 260.430 and any required of this state by any federal hazardous waste management act and as the commission may deem necessary, to provide for the safe management of hazardous waste to protect the health of humans and the environment.
- Adopt and update a state hazardous waste management plan to provide for the safe effective management of hazardous wastes within this state. This plan must be updated every five years.

If this seems like a full plate, it is. Unlike other Missouri boards and commission, the Hazardous Waste Management Commission makes decisions that will affect Missouri's environmental



Two former commissioners, Ben Kessler and Pat Gleason were honored in November for their service on the Hazardous Waste Management Commission. Here, Hazardous Waste Program Director Robert Geller presents a plaque to Gleason while, from left, Kessler and current commission chairman Jamie Frakes watch.

landscape for generations.

Advice from One Commissioner to Another

"An important reward is simply being appointed by the governor and confirmed by the Senate, an honor and privilege in itself that is given to only a few citizens. I have always believed that public service, be it paid or volunteer, is a notable and important endeavor."

- Norella Huggins.

Norella Huggins, a former vice-chair of the Hazardous Waste Management commission, was an exemplary member who took her duties very seriously. She believed commissioners play an important role for the people of Missouri in protecting the environment. During her tenure, Huggins took the opportunity to write down some of her thoughts and suggestions that could help future members. Her words continue to inspire and educate commissioners on the Hazardous Waste Management Commission along with other boards and commissions within the state.

For those who struggle to balance being on the commission and having a full-time job, Huggins suggested:

- Find out from the Director's office the bills the agency is supporting.
- Make appointments with your senator and representative in their local offices to brief them about the importance of the bills.
- Testify if possible.
- Send letters of support for bills to your legislators and members of the environmental committees.
- Read materials available on the Web, *"you will find much valuable information."*
- Call the Hazardous Waste Program director and ask questions.

To maintain the independence of the commission, Huggins recommended:

- Talk to stakeholders. The Hazardous Waste Program director can help the commission identify stakeholders.
- Have a good understanding of the issues is essential and part of that comes from input from interested parties. *"Knowledge is power and we are charged with the responsibility to make informed decisions fairly and effectively."*
- Read your program's statutes and regulations, even if it is tedious.

"There is the general reward of doing valuable public service, to know that in some way we are helping to further the mission of the programs of the Department of Natural Resources to protect the environment. By pursuing your mission with passion and dedication, you will enjoy ample rewards."

To Norella Huggins, as well as all our past, present and future Hazardous Waste Management Commissioners, we thank you!

Lead Mining - A Missouri Institution

Since 1720, lead has played an important role in the growth and development of Missouri. Lead mining hastened the settlement of the wilderness, spurred the development of transportation infrastructure, generated commerce and industry and created an economic base for generations of Missourians. It has been said that Missouri is a state built on a foundation of lead.

Premier Lead Producer of the World

Total, all-time lead production is estimated at more than 17 million tons valued at nearly \$5 billion dollars. For more than 70 years Missouri has led all other states in lead production, and in 1983 accounted for nearly 1/2 million tons, or 92 percent of the total U.S. production.

The tremendous resource of known lead deposits currently being mined in the Viburnum Trend District of southeast Missouri, and continued active exploration for new deposits, virtually guarantees Missouri a leading role in lead production for years to come.

While lead has proven to be an economic stimulus for Missouri over the years, it has also caused environmental and health problems, especially due to past mining practices. The Superfund section of this report will go into greater detail on some of Missouri's mine scarred lands; these vast areas of barren land demand lots of resources from the Hazardous Waste Program.

And lead exposure doesn't always trace back to mining waste. Lead-based paint, lead in children's toys, lead solder on water pipes and lead in window caulking all have the potential to cause health problems.

Every section in the Hazardous Waste Program, some more than others, deal with lead contamination. Throughout this report, some of these sections detail their involvement with lead.

The Department of Natural Resources works to educate Missourians about the hazards of lead and ways to prevent and reduce exposure to lead.

What health concerns are associated with lead contamination?

Source: epa.gov

Lead poisoning is a particularly dangerous public health threat because there may be no unique signs or symptoms. Early symptoms of lead exposure may include:

- Persistent fatigue.
- Irritability.
- Loss of appetite.
- Stomach discomfort or constipation.
- Reduced attention span.
- Insomnia.



This pile of mine tailings is one reminder of past mining at Bonne Terre.

Failure to treat lead poisoning in the early stages can cause long-term or permanent health damage, but because of the general nature of symptoms at early stages, lead poisoning is often not suspected.

Although the effects of lead exposure are a potential concern for all humans, young children (less than seven years old) are most at risk. This increased vulnerability results from a combination of the following factors:

- Children typically have higher intake rates (per unit body weight) for environmental media (such as soil, dust, food, water, air and paint) than adults, since they are more likely to play in dirt and put their hands and other objects in their mouths.
- Children tend to absorb a higher fraction of ingested lead from the gastrointestinal tract than adults.
- Children tend to be more susceptible than adults to the adverse neurological and developmental effects of lead.
- Nutritional deficiencies of iron or calcium, which are common in children, may facilitate lead absorption and exacerbate the toxic effects of lead.

The current blood lead level of concern in children is 10 micrograms of lead per deciliter of blood, or 10 µg/dL; however, since adverse effects may occur at lower levels than previously thought, various federal agencies are considering whether this level should be lowered further.

Missouri Department of Natural Resources - Hazardous Waste Program

Budget and Planning Section

Sunshine Requests

| | Information Requests | Public File Reviews |
|-----------------------|----------------------|---------------------|
| June-08 | 83 | 8 |
| May-08 | 77 | 10 |
| April-08 | 105 | 9 |
| March-08 | 95 | 13 |
| February-08 | 89 | 8 |
| January-08 | 93 | 13 |
| December-07 | 73 | 5 |
| November-07 | 67 | 4 |
| October-07 | 81 | 20 |
| September-07 | 77 | 14 |
| August-07 | 84 | 10 |
| July-07 | 71 | 4 |
| Total Requests | 995 | 118 |

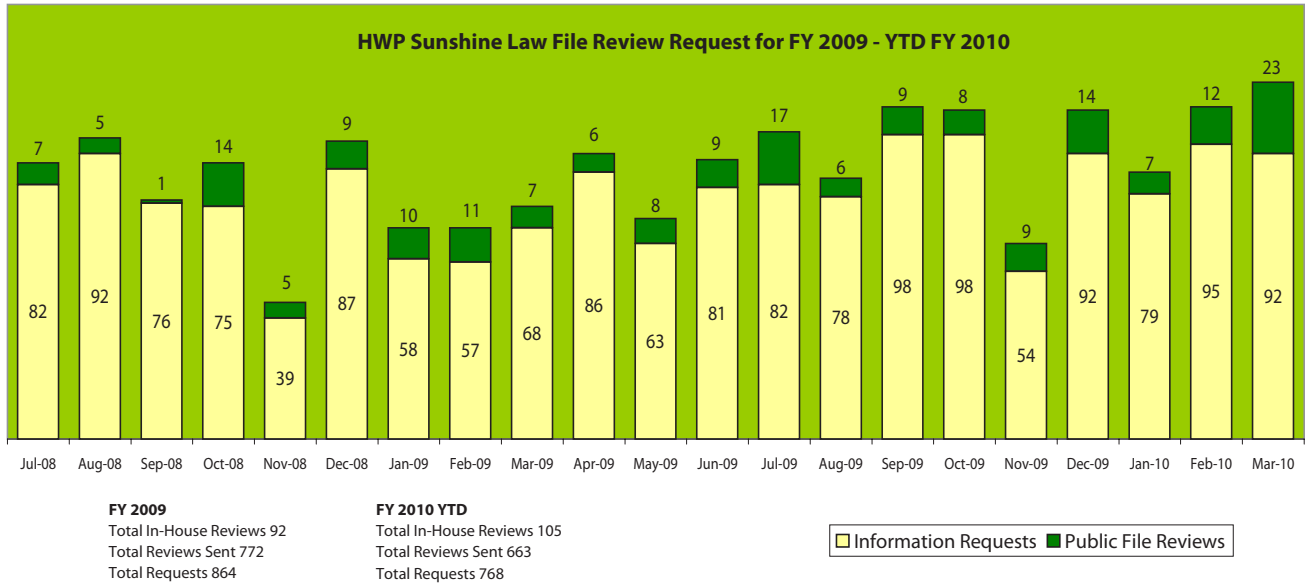
Information Requests

| | Information Requests | Public File Reviews |
|-----------------------|----------------------|---------------------|
| March-10 | 92 | 23 |
| February-10 | 95 | 12 |
| January-10 | 79 | 7 |
| December-09 | 92 | 14 |
| November-09 | 54 | 9 |
| October-09 | 98 | 8 |
| September-09 | 98 | 9 |
| August-09 | 78 | 6 |
| July-09 | 82 | 17 |
| June-09 | 81 | 9 |
| May-09 | 63 | 8 |
| April-09 | 86 | 6 |
| March-09 | 68 | 7 |
| February-09 | 57 | 11 |
| January-09 | 58 | 10 |
| December-08 | 87 | 9 |
| November-08 | 39 | 5 |
| October-08 | 75 | 14 |
| September-08 | 76 | 1 |
| August-08 | 92 | 5 |
| July-08 | 82 | 7 |
| Total Requests | 1632 | 197 |

Missouri Department of Natural Resources - Hazardous Waste Program

Budget and Planning Section

Budget and Planning



A single records requests, like the one pictured above, can take days to compile and organize to make sure everything requested is included.

Budget and Planning Records Center staff maintain approximately 47,000 files stored on 5,808 linear feet of file shelving.

The Missouri Department of Natural Resources issued certificates of completion for seven Brownfields/Voluntary Cleanup Program sites during October through December.

Brownfields are real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant.

Through the Brownfields/Voluntary Cleanup Program, private parties agree to clean up a contaminated site and are offered some protection from future state and federal enforcement action at the site in the form of a “No Further Action” letter or “Certificate of Completion” from the state.

Cannon Design Powerhouse in St. Louis

The Missouri Department of Natural Resources’ Brownfields/Voluntary Cleanup Program issued a Certificate of Completion for the Cannon Design Powerhouse site at 1100 Clark Ave. in St. Louis. The site consists of a multi-story building constructed in the early 1900s that was originally part of the St. Louis City Courts and Jail complex. It was later used as a steam generation plant for other buildings in downtown St. Louis.



Cannon Design Powerhouse in St. Louis.

Asbestos and lead-based paint were found to be present in the building, and subsurface sampling at the site revealed elevated levels of lead in surface soil. No other contaminants were found on-site requiring remedial action. The asbestos and some of the lead-based paint were removed in accordance with an approved remedial action plan. Some lead-based paint was left in place in the building and encapsulated. Lead in the surface soil remains on-site and exceeds target levels for residential land use but meets the criteria for non-residential land use. An environmental covenant was filed in the property’s chain of title to ensure the site remains non-residential. An Operations and Maintenance Plan to prevent exposure of the encapsulated lead-based paint was approved and included as an attachment to the environmental covenant. The department determined the site is safe for its intended use.

The site has been redeveloped into the offices of Cannon Design, an architectural, engineering and interior design firm.

El Mundo in St. Louis

The Missouri Department of Natural Resources’ Brownfields/Voluntary Cleanup Program issued a Certificate of Completion for the El Mundo site located at 4301 Manchester Ave. in St. Louis. The site is approximately 1/3 acre and includes a 3-story brick and wood structure with basement built in the 1890s and an adjacent parking area to the west. Most recent uses have been various restaurants on the first floor with El Mundo being the most recent. The second and third floor have been office space and residential apartments over the years. The building has been vacant since late 2006. In December 2006 the building was boarded up and marked “condemned” by the city. Suspect contaminants included asbestos, lead-based paint, possible polychlorinated biphenyls in old ballasts and possibly mercury in thermostats.

Missouri Department of Natural Resources - Hazardous Waste Program Brownfields/Voluntary Cleanup Section

A Phase II Environmental Site Assessment conducted in February 2007 documented asbestos-containing materials, lead-based paint, possible polychlorinated biphenyl, or PCB, containing light ballasts, other miscellaneous items such as fluorescent bulbs, possible mercury-containing thermostats, exit signs and smoke alarms. Interior abatement work was started in October 2008 in accordance with the interior Remedial Action Plan approved in September 2008. All of the asbestos-containing material was removed from the interior of the building. The lead-based paint was either chemically stripped or wet-scraped then covered with Fiberlock Type 3 encapsulant. A lead-based paint Operations and Maintenance Plan was written to manage the encapsulated lead-based paint remaining in the building. This plan will be filed in the property chain of title with the St. Louis City Recorder of Deeds.



El Mundo in St. Louis.

A subsurface investigation in the parking lot area of the El Mundo site was conducted concurrently with the

interior abatement work. Four soil borings were drilled in the parking lot area; samples of both soil and groundwater were taken and analyzed. Laboratory results confirm regulated materials found in the soil or groundwater were within acceptable ranges for soils found in the St. Louis area. Owners plan to gut and renovate the structure into a mix of retail and commercial spaces.

The department determined the site is safe for its intended use.

To assist with the redevelopment of this Brownfields/Voluntary Cleanup Program site, the property owner was awarded over \$107,000 in Brownfield Redevelopment tax credits in September 2008.

Brock Grain Systems in Kansas City

The Missouri Department of Natural Resources' Brownfields/Voluntary Cleanup Program issued a Certificate of Completion for the Brock Grain Systems site located at 7400 East 13th St. in Kansas City. Brock Grain Systems is a 23-acre site operating a steel fabrication facility primarily producing metal silos for grain storage. Brock Grain Systems started operating at the property in July 1997 when the assets of the prior business were purchased from Butler Manufacturing Company.

A forklift accident at the site resulted in a hydraulic oil release. Upon further investigation it was discovered hydraulic oil has been leaking into a sewer trench that discharges into the Blue River during high rain events. In order to lessen the release of hydraulic oil and prevent the oil from discharging into the Blue River, Brock Grain Systems enrolled in the Brownfields/Voluntary Cleanup Program.

There were 554 tons of hydraulic oil contaminated soil excavated from the site. A new storm sewer system, including pipe and manholes, was installed. Additionally, 700 gallons of contaminated water was pumped out of the excavation trenches. After excavation and installation of the new system were complete, confirmation samples were taken. There is no indication contamination above residential risk-based target levels remains on-site. The department determined the site is safe for its intended use.

North Park - Phase I in Berkeley, Ferguson and Kinloch

The Missouri Department of Natural Resources' Brownfields/Voluntary Cleanup Program issued a Certificate of Completion for the North Park - Phase I site, located at the northeast corner of Interstate 70 and Interstate 170 near Berkeley, Ferguson and Kinloch. The Phase I area is roughly bounded by Interstate 70 to the south, Interstate 170 to the west, Maline Creek to the north and Hern Street to the east. Various properties, including 4700 N. Hanley, are specifically excluded from the site because remediation is not yet complete on these properties, North Park does not currently own these properties or these properties are not included in the North Park development.

The property is mostly residential and undeveloped (formerly residential), with some mixed commercial sites. Based on environmental investigations, the site was divided into seven different areas of environmental concern based on the different environmental issues in order to address each separately. These areas of environmental concern included:

- Existing structures needing abatement prior to demolition.
- Debris potentially containing asbestos buried in former basements of previously demolished structures.
- Miscellaneous surface debris throughout the property requiring removal, sorting and disposal.
- The dump along Margaret Avenue requiring removal.
- Sorting and proper disposal.
- A former auto service station with potential petroleum contamination.
- A former dry cleaner with petroleum and chlorinated solvent contamination.
- A former nursery with suspected contamination.

Environmental site assessments revealed the following contaminants of concern in soil, groundwater or structures across the site:

- Asbestos-containing materials.
- Freon.
- Fluorescent lights
- Household cleaners.
- Paints.
- Batteries.
- Miscellaneous solid waste.
- Volatile organic compounds.
- Diesel and oil.
- Polycyclic aromatic hydrocarbons, metals and PCBs.

Various remediation activities were conducted to address the identified areas of environmental concern.

- Pre-demolition inspection, abatement and demolition of 34 on-site structures.
- Excavation, transportation and disposal of approximately 60,000 tons of buried asbestos-containing basement debris.
- Removal and proper disposal of approximately 2,500 tons of miscellaneous surface debris composed of garbage, clothing, furniture and other items.
- Excavation and proper disposal of approximately 60,000 tons of debris from the uncontrolled dump site (Margaret Avenue Debris), followed by confirmation sampling for any suspected contaminants of concern.
- Additional soil and groundwater sampling and analysis.
- Proper closure of an underground storage tank.

Missouri Department of Natural Resources - Hazardous Waste Program Brownfields/Voluntary Cleanup Section

Following site characterization activities, a Tier 1 Risk Assessment was performed in accordance with the Missouri Risk-Based Corrective Action Technical Guidance. Concentrations of chemicals of concern in soil were below applicable Risk-Based Target Levels. To protect future workers and occupants at the property, the Risk Assessment recommended restricting land use to non-residential, prohibiting installation of groundwater wells and implementing a Soil Management Plan for land disturbance activities. The department determined the site is safe for its intended use.

Current plans for the site include development of a commerce center providing distribution, industrial, retail and office space.

Brick City East Redevelopment in Springfield

The Missouri Department of Natural Resources' Brownfields/Voluntary Cleanup Program issued a Certificate of Completion for the Brick City East Redevelopment site at 301 West Mill St. in Springfield. The site consists of three city lots in downtown Springfield. Three buildings occupy the subject site, which has been developed since approximately the 1920s. Past uses include dry good warehouses, ice manufacture, refrigerated storage and various retail businesses. A Phase I Environmental Site Assessment identified the following recognized environmental conditions:

- Asbestos.
- Lead paint.
- Potential polychlorinated biphenyl, or PCB, containing ballasts inside the buildings.

The buildings had all asbestos-containing materials and all lead-based paint removed. Interior walls and ceilings were removed, with the exception of structural supports. Windows were removed and permitere walls were sandblasted to bare surfaces. New windows were installed in all of the buildings. Fluorescent light bulbs were re-used in new fixtures. During the course of the remediation, three large PCB oil containing transformers weighing a total of 13,592 pounds were identified in an area between two of the buildings and required pickup and disposal by a licensed PCB disposal company. The department determined the site is safe for its intended use.

The two buildings on West Mill St. were part of an ice and refrigeration company. Large round support pillars in one are typical of warehouses of the early 20th century. The other refrigeration building features original exposed steel beam supports. The third, fronting on Phelps St., was a mercantile building with corner placement of the main entry. The Brick City East site was approved for \$240,000 in tax credits by the Missouri Department of Economic Development and will be developed as commercial space and residential lofts.

Southern Star Central Gas Pipeline – Northern Area Sites in northern Missouri

The Missouri Department of Natural Resources' Brownfields/Voluntary Cleanup Program issued Certificates of Completion for the Southern Star Central Gas Pipeline – Northern Area Sites. These sites are spread throughout several counties in northern Missouri.

The Star Central Gas Pipeline Northern Area is a natural gas pipeline running across northern Missouri, and includes 37 small meter or compressor stations. Up until the 1980s the meters and compressors used mercury to monitor gas flow. Mercury may have been released to soil during maintenance operations at each station. The purpose for the sites entering the Brownfields/Voluntary Cleanup Program was to assess the 37 meter stations for potential mercury contamination, and if necessary, perform cleanups.

Site characterization results indicated mercury was detected in soils at 18 of the meter stations at levels exceeding the Missouri Risk Based Corrective Action Default Target Levels. The contaminated soil at these sites was excavated and properly disposed. Post-excavation confirmation sampling results were all below default target levels. The remaining sites did not contain mercury at levels requiring cleanup. The department determined all of the sites are safe for their intended uses.

The sites are mostly located in rural or industrial settings and will remain undeveloped.

Advertisers Display Building (former) in St. Louis

The Missouri Department of Natural Resources' Brownfields/Voluntary Cleanup Program issued a Certificate of Completion for the Advertisers Display Building (former) site at 1818 Washington Ave. in St. Louis. The subject building is a two story, brick and concrete structure with a partial basement in the rear and a sub-basement boiler room. According to historic records, the property was last occupied by Advertisers Display & Exhibits Inc. beginning in 1975. Prior to this time the subject property was occupied by various printing companies dating back to the 1930s. The building has been vacant since 2005.

Initial site assessments documented asbestos-containing materials, lead-based paint and miscellaneous cleaning agents and janitorial supplies in the building. Beginning in January 2009, all of the asbestos-containing materials, which included thermal system insulation found on pipes, roof flashings, window glazing and floor tile, was removed from the interior of the building. In total, approximately 35 cubic yards of asbestos-containing materials waste was properly disposed of in an approved landfill.

Lead-based paint was identified in many parts of the building: on the second floor structural columns; on radiators located throughout the interior; and on many of the interior walls, ceilings and windows. Windows and radiators were removed intact. The lead-based paint on those components was disposed of as demolition debris. All remaining lead-based paint was sandblasted, the waste material was collected and tested and was properly disposed of at an authorized landfill. Wipe sampling confirmed adequate lead-based paint cleanup.

Documentation submitted with the final report confirmed the miscellaneous wastes found on-site were handled properly and either recycled or disposed of in an approved manner. The department determined the site is safe for its intended use.

In May 2008, this project received more than \$171,000 in Brownfields Redevelopment Tax Credits. Possible future plans include commercial and retail space on the first floor and condominiums or apartments on the second floor.

Missouri Department of Natural Resources - Hazardous Waste Program Brownfields/Voluntary Cleanup Section

Sites in Brownfields/Voluntary Cleanup

| | Active | Completed | Total |
|----------|--------|-----------|-------|
| October | 355 | 449 | 804 |
| November | 319 | 489 | 808 |
| December | 321 | 491 | 812 |

New Sites Received

October

St. Louis Post Dispatch Print Building, St. Louis.
Industrial Services Corp. (Former), Kansas City.

November

Beaux Art/Pythian Hall Complex, St. Louis
Council Tower Redevelopment Project, St. Louis
Agraform Facility (Former Bayer CropScience),
St. Louis
Ammon Painting Company (former), Kansas City

June

Chase Apartments, St. Louis.
Unitog Rental (Cintas)-Kansas City, Kansas City.
Erlbacher Building, Cape Girardeau.

Sites Closed

October

Cannon Design Powerhouse, St. Louis.
El Mundo, St. Louis.

November

North Park - Phase I, Berkeley.
Brick City East Redevelopment, Springfield.
Carrollton Checks, Warrensburg.
Carrollton T.B., Carrollton.
Clinton, MO T.B., Warrensburg.
Concordia T.B., Concordia.
Dearborn T.B., Dearborn.
Dehy Plant, Marshall.
East Lynne and Garden City T.B., Harrisonville.
Haydite Plant New Market MO, New Market.
Higginsville, Higginsville.
Higginsville T.B., Higginsville.
Holden MO T.B., Holden.
Kansas City KS Fairfax Bridge T.B., Kansas City.
Kansas City MO East T.B., Kansas City.
Knob Noster Comp. Fuel, Knob Noster.
Knob Noster T.B. - Whiteman AFB, Knob Noster.
Knob Noster, MO, Knob Noster.
Lake Lotawana MO T.B., Lake Lotawana.
Lexington Richmond and Henry MO, Lexington.
Marshall MO Add T.B., Marshall.
Marshall T.B., Marshall.
Nevada MO T.B., Nevada.
New South Town Border/Pleasant Hill Power
Plant, Pleasant Hill
Norborne MO T.B., Carrollton.
Peculiar Comp Fuel, Peculiar.
Platte City MO T.B., Platte City.
Plattsburg T.B., Plattsburg.
Pleasant Hill MO T.B., Peculiar.
Slater T.B., Slater.

New Sites Received

December

Terrace Building (The), St. Louis
Paideia Academy, St. Louis
Washington Laundry (former), Kansas City
Moto Hotel Building, St. Louis

Sites Closed

November cont'd.

St Joe Airport T.B., St. Joseph
St Joseph #1 T.B., St. Joseph
St Joseph #2 T.B. (New), St. Joseph
St Joseph #2 T.B. (Old), St. Joseph
St Joseph Power Plant (Edmond Street),
St. Joseph
Sweet Springs MO T.B., Concordia
Warrensburg T.B., Warrensburg

December

Richards-Gebaur Memorial Airport - Phase I
Parcel, Kansas City
Advertisers Display Building (former), St. Louis

Missouri Department of Natural Resources - Hazardous Waste Program Brownfields/Voluntary Cleanup Section

Drycleaning Environmental Response Trust Fund

The Department of Natural Resources' Drycleaning Environmental Response Trust, or DERT, Fund provides funding for the investigation, assessment and cleanup of releases of chlorinated solvents from dry cleaning facilities. The two main sources of revenue for the fund are the dry cleaning facility annual registration surcharge and the quarterly solvent surcharge.

Registrations:

The registration surcharges are due by April 1 of each calendar year for solvent used during the previous calendar year. The solvent surcharges are due 30 days after each quarterly reporting period.

| Calendar year 2008 | Active Dry Cleaning Facilities | Facilities Paid | Facilities in Compliance |
|--------------------|--------------------------------|-----------------|--------------------------|
| Jan. - March 2009 | 255 | 134 | 52.55% |
| April - June 2009 | 255 | 211 | 82.75% |
| July - Sept. 2009 | 255 | 227 | 89.02% |
| Oct. - Dec. 2009 | 255 | 255 | 100% |

| Calendar year 2009 | Active Solvent Suppliers | Facilities Paid | Suppliers in Compliance |
|--------------------|--------------------------|-----------------|-------------------------|
| Jan. - March 2009 | 11 | 10 | 90.91% |
| April - June 2009 | 11 | 11 | 100% |
| July - Sept. 2009 | 11 | 9 | 81.82% |
| Oct. - Dec. 2009 | 11 | 8 | 72.73% |

Cleanup Oversight:

| Calendar Year 2009 | Active | Completed | Total |
|--------------------|--------|-----------|-------|
| Jan. - March 2009 | 23 | 10 | 27 |
| April - June 2009 | 20 | 11 | 27 |
| July - Sept. 2009 | 20 | 9 | 27 |
| Oct. - Dec. 2009 | 21 | 8 | 28 |

Sites Recieved

November
Community Laundromat, Ava.

Sites Closed

No new sites recieved this quarter.

Reimbursement Claims:

The applicant may submit a reimbursement claim after all work approved in the work plan is complete and the fund project manager has reviewed and approved the final completion report for that work. The fund applicant is liable for the first \$25,000 of corrective action costs incurred.

| | Received | Under Review | Paid/Processed |
|----------|----------|--------------|----------------|
| October | 3 | 7 | 3 |
| November | 0 | 7 | 1 |
| December | 4 | 4 | 3 |

| | Received | Under Review | Paid/Processed |
|----------|-------------|--------------|----------------|
| October | \$0 | \$99,164.43 | \$58,159.18 |
| November | \$0 | \$93,694.28 | \$18,218.89 |
| December | \$71,145.75 | \$137,460.06 | \$51,482.86 |

Reimbursement Claims Processed:

| | | |
|---|--------------|-------------|
| Busy Bee Laundry | Rolla | \$25,441.20 |
| Fosters Cleaners & Shirt Laundry | Blue Springs | \$36,293.00 |
| Frontenac Cleaners West End | St. Louis | \$18,218.89 |
| Tri State Service Co - E. Trafficway Site | Springfield | \$15,555.93 |
| Zehrt Printing | St. Louis | \$32,351.91 |

Total reimbursements as of Dec. 31, 2009: \$1,038,900.63
DERT Fund Balance as of Dec. 31, 2009: \$2,123,952.00

Missouri Department of Natural Resources - Hazardous Waste Program Compliance and Enforcement Section

Inspections and Assistance

Regional Office Employees:

- Conducted 164 hazardous waste generator compliance inspections:
 - 17 at large quantity generators.
 - 86 at small quantity generators.
 - 61 at conditionally exempt small quantity generators.
- Issued 44 Letters of Warning and five Notices of Violation requiring actions to correct violations.
- Made 15 Environmental Assistance Visits to hazardous waste facilities. Environmental Assistance Visits are on-site visits with a representative of a facility. The visits are intended to improve the understanding of a permit, registration, certification, report or other similar requirement. Environmental Assistance Visits provide an opportunity to enhance environmental compliance with regulations.
- Received 72 citizen concerns regarding hazardous waste.
- Conducted on-site investigations at 68 sites.

Hazardous Waste Program Compliance and Enforcement staff:

Conducted seven inspections of commercial treatment/storage/disposal facilities, one inspection of a noncommercial TSD facility and three case development inspections. Staff also made four compliance assistance visits, one of which was at an electronics recycling facility. Two hazardous waste enforcement cases were referred to the Missouri Attorney General's Office.

Tanks Compliance and Enforcement Unit

- Continued to address noncompliance issues resulting from compliance inspections.
- The completion of this fiscal year will mark the third year of the required three-year inspection cycle mandated by the Energy Policy Act of 2005 as well as successful joint contract inspection efforts between the department and the Petroleum Storage Tank Insurance Fund. The unit continues to address the financial responsibility violations as a priority.
- Seventeen facilities with financial responsibility violations were referred to the unit for enforcement action. During this time 46 cases were resolved within the program and six cases (does not include the financial responsibility cases) were referred to the Attorney General's Office for legal action. The expedited referral process for the financial responsibility cases approved by the Missouri Hazardous Waste Management Commission continues to make it possible for staff to address noncompliant sites in a timelier manner, thereby reducing the number of sites without financial responsibility. Petroleum underground storage tank owners and operators are required to have funds to pay for cleanup and damages that may occur from a petroleum release from their underground storage tank systems. Ways to meet the requirements of financial responsibility could include pollution liability insurance (state fund or private insurer), financial test of self insurance or letter of credit.

Polychlorinated Biphenyl Inspectors:

Conducted 17 compliance inspections at various types of facilities throughout the state. The reports are forwarded to the U.S. Environmental Protection Agency Region 7, which has authority for taking any necessary enforcement action that may be warranted according to the Toxic Substances Control Act.

Hazardous Waste Transporter Inspector:

Conducted 53 commercial vehicle inspections during which two vehicles were placed out of service. The inspector also conducted one transporter facility inspection and cited three deficiencies, which have since been corrected. As part of the Commercial Vehicle Safety Association's protocol, the department sends the reports to the Missouri Highway Patrol. The transporter must certify to the Patrol that the violations were corrected.

As of December, there are 218 licensed hazardous waste transporters in Missouri.

Siegel-Robert Automotive, Inc.

The Missouri Department of Natural Resources and Attorney General's Office have signed a settlement agreement with Siegel-Robert Automotive Inc., located in Farmington, to resolve violations of the Missouri Hazardous Waste Management Law and Regulations. The settlement agreement includes a total penalty of \$28,768.74, of which Siegel Robert paid \$14,384.37 in penalties to the St. Francois County School Fund. The remaining \$14,384.37 is suspended contingent on the company not committing any repeat violations for five years following the effective date of the settlement agreement.

In 2008, the department inspected Siegel-Robert Automotive Inc. and noted violations including acting as an unpermitted hazardous waste treatment facility. During the inspection, the department observed a 20 cubic yard container of listed hazardous waste generated by chrome-electroplating activities. The facility had placed a large plastic tubing from the drying oven into this container that evaporated the material, reducing the volume of waste. This type of activity requires a hazardous waste treatment permit. Additional hazardous waste violations included failure to keep satellite containers closed, failure to update notification of hazardous waste activity, failure to comply with hazardous waste training requirements and failure to comply with emergency preparedness requirements.

With department direction and oversight, the responsible party corrected all violations.

Celtic Painting Inc.

The Missouri Department of Natural Resources and Attorney General's Office have signed a settlement agreement with Celtic Painting Inc. to resolve violations of the Missouri Hazardous Waste Management Law and Regulations. Major violations were cited at two different Celtic Painting facilities in St. Louis. The settlement agreement for both Celtic Painting facilities included a total penalty of \$28,600, of which Celtic Painting will pay \$3,000 in four quarterly payments of \$750. St. Louis City School Fund will receive \$1,500, and \$1,500 will be paid to the St. Louis County School Fund. The remaining amount was suspended based on an analysis of Celtic Painting's ability to pay.

In 2007, the department conducted a hazardous waste compliance inspection at Celtic Painting Inc. located at 900 South Second St. The company was storing more than 8,000 pounds of paint-related hazardous waste characteristic for ignitability and toxicity in an abandoned, open and unsecured intermodal container accessible to the public and appeared to have been occupied by vagrants. Celtic Painting Inc. did not have a permit to store hazardous waste. Additionally, the facility located at 900 South Second St. failed to comply with general requirements, pre-transport, containerization and storage requirements, preparedness, prevention and emergency procedures requirements.

The Celtic Painting facility located at 9437 Watson Industrial Drive in St. Louis failed to follow general requirements, pretransport, containerization and storage requirements, satellite accumulation requirements and preparedness, prevention and emergency procedures requirements.

With department direction and oversight, the responsible party properly managed and disposed of the paint waste and corrected all violations.

Missouri Department of Natural Resources - Hazardous Waste Program Compliance and Enforcement Section

Enterprise Equipment, LLC

The Missouri Department of Natural Resources and Attorney General's Office signed a settlement agreement with Enterprise Equipment, LLC to resolve violations of the Missouri Hazardous Waste Management Law and Regulations. The settlement agreement for Enterprise Equipment includes a total penalty of \$8,000, of which Enterprise Equipment will pay \$1,000 in four quarterly payments of \$250. The amount suspended was based on an analysis of Enterprise Equipment's ability to pay.

In 2009 the department performed an inspection at the Enterprise Equipment facility located at 234 Axminster in Fenton. The inspector observed spent fuel filters disposed of in the sanitary trash. A hazardous waste determination had not been made on the fuel filters before they were disposed in the trash. Additionally, Enterprise Equipment, a gas station contractor, transported and accepted undrained fuel filters from gas stations without first obtaining a Missouri hazardous waste transporter license or a hazardous waste storage permit.

With department direction and oversight, the responsible party corrected all violations.

Niangua Mergantile

The Niangua Mergantile is located in Niangua. This facility is the subject of an environmental concern involving the storage and mismanagement of cathode ray tubes. The department referred the case to the Attorney General's Office on Dec. 15, 2009.

The facility sells discount groceries and accepts cathode ray tubes. Cathode ray tubes are found in televisions and old computers and contain levels of lead that exhibit the hazardous waste characteristic of toxicity. The operator of the facility, Jon Roberts, is also the responsible party for Echo Valley, the highly publicized electronic waste dump site located in Rolla. The department had previously referred the Echo Valley site to the Attorney General's Office for violations of the Hazardous Waste Management Law and Regulations.

The department received an anonymous complaint that Roberts was demanufacturing cathode ray tubes in the back of a building located at 143 Commercial Street, Niangua. On Oct. 30, 2009, the department's Southwest Regional Office, in conjunction with the Hazardous Waste Program's Compliance and Enforcement Section, conducted an inspection. Staff observed numerous cathode ray tubes, some of which had been separated from their casings and some stored haphazardly on the floor and in broken boxes. Roberts' representative stated Roberts was no longer accepting electronics due to not having an end market for the materials.

Because the facility cannot demonstrate a legitimate recycling plan for the cathode ray tubes, the cathode ray tubes do not qualify for the cathode ray tube exclusion from certain hazardous waste regulations and must now be managed as hazardous waste.

The Attorney General's Office has been requested to compel the Niangua Mergantile facility to appropriately manage and dispose of the cathode ray tubes and seek civil penalties in the amount of \$12,000 against the responsible party.

Dwayne Brizendine

Dwayne Brizendine, Kansas City, is the subject of an environmental concern involving the storage and mismanagement of hazardous waste. The department referred the case to the Attorney General's Office on December 1.

The department received a complaint from the Missouri Department of Revenue that abandoned and leaking drums were on the Ron's Auto property owned by Dwayne Brizendine. Ron's Auto was inspected in September 2006. During the inspection, it was determined the drums originated from Techno Seal, a nearby company also owned by Brizendine. The department conducted a sampling event with the owner's permission in November 2006. Thirty-one of the 56 drums on-site were sampled. Six drums were determined to be hazardous waste for ignitability and one drum was determined to be used oil. The remaining 24 sampled drums were either determined to be solid waste or were empty. This left 25 drums that needed to be characterized. Ron Schliefert (who had purchased the property) disposed of the drums of solid waste and recycled the empty drums. A follow-up inspection was performed in March 2009. Inspectors discovered only five drums of hazardous waste remain to be properly disposed and 10 drums of solid waste remain to be characterized and properly disposed. It is unknown what happened to one drum of hazardous waste, one drum of used oil and the 15 additional drums of uncharacterized solid waste.

Many attempts were made to bring the facility back into compliance since the original inspection performed in 2006, but due to staff shortages and issues related to site ownership, the department has been unable to compel compliance.

In October 2009, Brizendine claimed to the department environmental investigator he was not responsible for the drums of hazardous waste on-site and he would be moving from his current residence within a couple of weeks. Brizendine would not provide his forwarding address to the investigator.

The Attorney General's Office has been requested to compel Dwayne Brizendine to clean up the hazardous waste located at the Ron's Auto facility and pay cost recovery of \$15,000 (if the department incurs clean up costs) and civil penalties in the amount of \$25,000.

New Listserv Postings

For the past quarter, the Enforcement and Compliance Assistance Listserv for Hazardous Waste Generators is continuing on its topic of Missouri specific regulations. It is vital to inform Missouri generators of the unique regulations that apply to them and the listserv is the ideal forum for this type of outreach. Over the past three months topics included:

- Report and billing reminders.
- Preventing accidental ignition or reaction of ignitable and reactive wastes.
- Satellite labeling requirements.
- Proper spill and fire control and equipment.

Missouri Department of Natural Resources - Hazardous Waste Program Federal Facilities Section

In early February, staff of the Federal Facilities Section had the opportunity to be interviewed and share the story of Missouri's Minuteman II Missile sites with a Columbia TV news station. These sites involve a form of long-term stewardship that requires cooperation between the owners of these sites and the department.

The news story focused on the background of the Minuteman II Missile sites and included a tour of the last remaining underground launch control facility, named Oscar-1, at Whiteman Air Force base.

Federal Facility staff also took the news crew to a former missile site now owned by a farmer and used to store hay.

The story and video is available online at <http://bit.ly/cr5jDQ>.

Owner education is critical at these sites and the Federal Facilities Section sees this as an opportunity to continue outreach efforts. There are certain restrictions that are placed on the former Air Force properties that current landowners need to be aware of so as not to disturb the contamination left in place.

Other recent Minuteman II outreach efforts include:

1. Developed a Web page for property owners, online at dnr.mo.gov/env/hwp/fedfac/MinutemanII.htm.
2. Created a form for waiver requests.
3. Wrote reminder letters to go out periodically to landowners.
4. Shared a Geographic Information System, or GIS, layer with locations to the National Resource Conservation Service.
5. Talked with County Assessor office staff in the 14 affected counties.



Standing in front of a former Minuteman II missile site, Federal Facilities staff member Hannah Humphrey answers reporters' questions.



This display at the Oscar-1 facility at Whiteman Air Force Base shows the underground setup for the launch control facility.

If you have any questions regarding these sites, please contact Hannah Humphrey of the Federal Facilities Section at 573-751-1080 or by e-mail at hannah.humphrey@dnr.mo.gov.

History of the Minuteman II Missile Sites

The State of Missouri was host to 165 Minuteman II missile sites managed by the United States Air Force from 1964 until 1997. The Minuteman II missile sites were scattered across 14 counties on land previously used for agricultural purposes. Of the 165 sites, 150 were launch facilities or silos that each contained a Minuteman II missile and 15 sites were launch control facilities. For the 33 years the sites were active, at least two Air Force personnel were continuously stationed in each launch control facility.

The United States Air Force began deactivating the missile system in 1991 as a result of the International Strategic Arms Reduction Treaty, also known as START. The deactivation process involved removing each missile, imploding the missile silo and covering it with soil. During the deactivation process, investigators discovered waterproofing materials used in construction of silos and underground storage tanks contained a hazardous substance called polychlorinated biphenyls.

Investigation

Investigation also revealed some of the sites had leaking petroleum underground storage tanks. To monitor the diesel fuel and PCBs, 101 groundwater monitoring wells were installed at 21 of the launch facilities and sampled annually for five years. Five years of groundwater sampling data confirmed the PCBs are not migrating into groundwater and petroleum contamination is decreasing through a process called natural attenuation, in which microorganisms in the soil break down the chemicals into nontoxic substances.

It was neither technically nor economically practical to remove the PCB contamination because the silos were buried at a depth of 80 feet. Therefore, the Air Force, the Missouri Department of Natural Resources and the U.S. Environmental Protection Agency agreed to leave contaminants in place. They also agreed to prohibit disturbance of capped contamination through land use controls memorialized through deed restrictions.

At the completion of the closure process, each Minuteman II property was sold by the U.S. General Services Administration to adjacent landowners or other interested parties. The department, EPA and the Air Force continue to work together under a formal agreement to ensure the continuing safety of the closed Minuteman II sites.

Land Owners are Important

Land use restrictions and education of Minuteman II property owners are critically important parts of our continuing stewardship of the former missile sites in Missouri. Adherence to land use restrictions ensures the effectiveness of engineering controls, which in turn protect human health and the environment.

Many of these sites are still being used, often to store hay and farm equipment.

One of several goals of the Permits Section is to make sure businesses that want to actively treat, store (for longer than 90 days) or dispose of hazardous waste in Missouri are protective of human health and the environment and follow state and federal hazardous waste laws and regulations. The Permit Section oversees many different types of hazardous waste facilities, including those that handle or recycle hazardous waste containing lead.

Lead Treatment and Recycling Process

When used properly, lead is an important, critical component in many of our modern conveniences. However, when used improperly, or disposed of carelessly, lead can be harmful to both people and the environment. The U.S. Environmental Protection Agency has identified specific lead compounds, such as lead acetate, lead oxide, lead phosphate, and tetraethyl lead, as hazardous waste because of their toxic characteristics.

EPA also established a concentration limit for lead, or the amount of lead a waste can contain before it is considered a hazardous waste. The lead in electronic waste, such as computers, televisions, batteries and other products can seep out and contaminate our soil, water and air if that product gets crushed, illegally dumped or improperly incinerated. Over time, water and other liquids, react with the waste, and absorb different contaminants. This liquid, referred to as leachate, could contain contaminants in an amount that may be harmful to human health or the environment if released into the groundwater.

A laboratory test called the Toxicity Characteristic Leaching Procedure, or TCLP, simulates the leaching of contaminants through a landfill. The test is used to determine the presence and concentrations of 40 different contaminants. If the waste being examined contains any of the 40 contaminants, including lead, at a concentration higher than the EPA established concentration limit for that contaminant, the waste is said to have “failed the TCLP test” and must be regulated as a hazardous waste under the Resource Conservation and Recovery Act of 1976, also known as RCRA (40 CFR Part 261), unless that waste is exempt.

Under the Missouri Hazardous Waste Management Law, the Permits Section regulates the facilities that actively treat, store longer than 90 days or dispose of hazardous waste in Missouri. This law combines the RCRA requirements EPA authorized Missouri to implement with other requirements that Missouri has added. It is designed to make sure facilities that handle hazardous waste, such as lead, operate safely and protect people and the environment.

Through Missouri’s Resource Recovery rule, the Permits Section regulates the facilities that recycle hazardous waste such as lead by reclaiming, reusing or transforming it into new products that are no longer hazardous waste. Properly recycling computers, televisions, batteries and other lead-bearing products can reduce the amount of waste in landfills and help prevent lead from polluting soil, water and air.

Lead-Acid Batteries

One of the largest uses of lead is in the battery industry. According to EPA, nearly 99 million wet-cell lead-acid car batteries are manufactured each year. There are also gel cells and sealed lead-acid batteries, which are commonly used to power industrial equipment, emergency lighting and alarm systems. Used or “spent” lead-acid batteries are considered a hazardous waste under RCRA because they exhibit the toxicity characteristic for lead and the corrosivity characteristic for the sulfuric acid electrolyte in the battery. According to the Missouri Revised Statutes 260.260, RSMo, it is illegal to knowingly place a spent lead-acid battery in a solid waste disposal area, discard or otherwise dispose of a lead-acid battery in the state of Missouri.

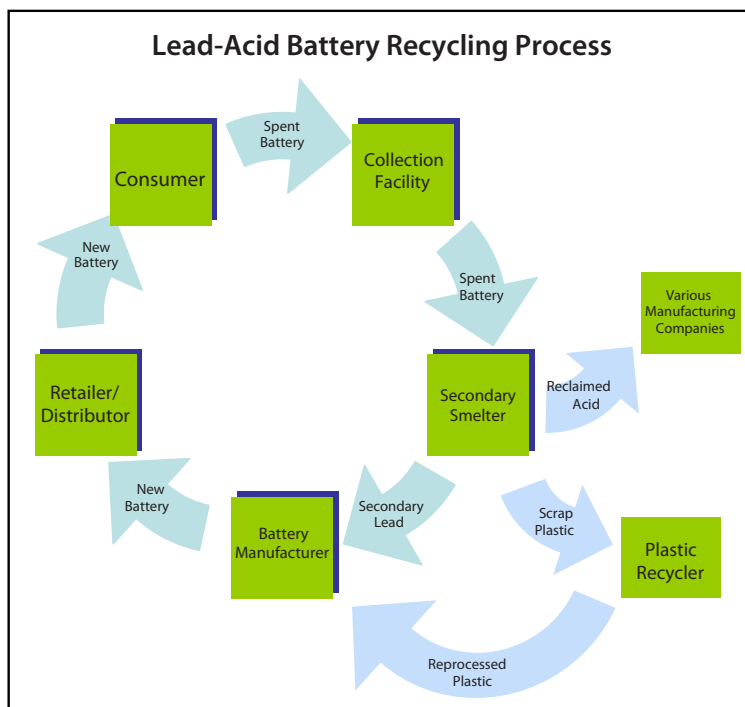
Lead from lead-acid batteries is recycled in much the same way as when it was originally removed from lead ore, by smelting and refining. In Missouri, the used batteries are collected by permitted recycling or resource recovery facilities, battery manufacturers and almost any retailer that sells lead-acid batteries, as required by state law. The used batteries are sent to a secondary lead smelter where, under strict environmental regulations, the sulfuric acid, lead and plastic are reclaimed. The Doe Run Company - Buick Resource Recycling Facility and Exide Technologies - Canon Hollow Recycling Center are secondary lead smelters located in Missouri.

Lead-acid battery recycling is not a simple process. First the batteries must be opened, the 'dirty' sulfuric acid drained and the lead-bearing material separated from the plastic case material. Some facilities do this by using a battery shredder to break up the battery cases. Other facilities use a battery breaker to cut off the tops of the batteries and rotate them to dump the acid. After opening, the batteries are further rotated to remove the lead battery plates. What remains is crushed. Both Missouri facilities separate the broken batteries into the plastic case material, sulfuric acid and lead-bearing components. The plastic case material is shipped off-site to a plastic recycler where it is further processed for manufacture into new plastic products, such as battery cases. The sulfuric acid and lead-bearing components are stored in designated storage areas and processed at the smelters.

The first phase of lead-acid battery recycling, the storage and disassembly of the lead-acid batteries, is regulated under the Missouri Hazardous Waste Management Law. The Permits Section issues hazardous waste permits, which are legally binding enforceable documents outlining the facility design and operation and safety standards. The permit also describes the hazardous waste management activities the facility must perform, such as monitoring and reporting. The Permits Section is responsible for monitoring the facility to ensure it is managing hazardous waste safely and responsibly.

The actual recycling of the sulfuric acid and lead-bearing components of the lead-acid battery is regulated under Missouri's Resource Recovery rule. The Permits Section issues Resource Recovery certificates, which are a type of formal approval resembling a permit, that require the facility to meet certain operational standards. Missouri facilities either make detergent grade sodium sulfate crystals from the reclaimed 'dirty' sulfuric acid or filter the 'dirty' sulfuric acid and ship the resulting 'clean' acid off-site as a product.

As for the battery plates and other lead components of the battery, they are cleaned and smelted in a furnace to free the elemental lead. The molten lead then goes through a process where specific reagents are added to the molten lead to react with and remove the remaining non-lead components of the mixture. The molten lead is poured into ingot molds and cooled. Various manufacturers purchase the final product, called secondary lead, then re-melt and use it to produce new products. EPA estimates the typical new lead-acid battery contains 60 to 80 percent recycled lead and plastic.



Cathode Ray Tubes

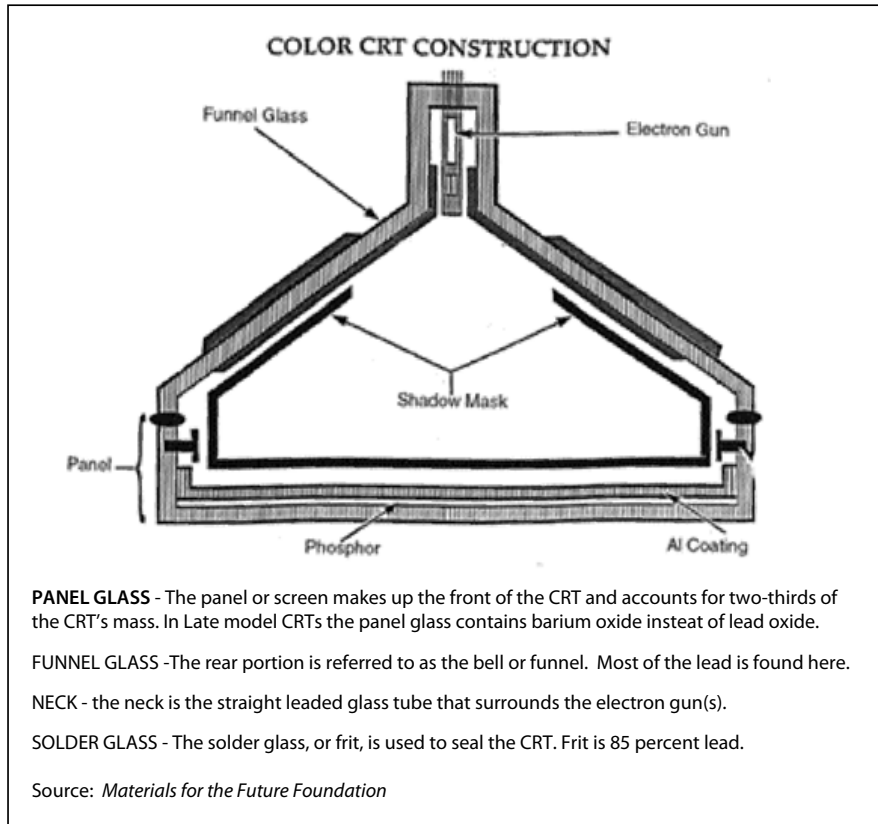
Source: Materials for the Future Foundation

With a constant supply of newer, faster products on the market, EPA estimates more than 2 million tons of computers and other electronics, including televisions and other video equipment, assorted peripherals, audio equipment and phones, are disposed each year. Currently, only about 20 percent of these materials are recycled.

A cathode ray tube, or CRT, is the picture tube or video display part of traditional televisions and computer monitors. An average tube contains between 15 and 90 pounds of glass. Lead and other elements are added to the glass to protect the user from x-rays produced within the operating tube. If intended for disposal, businesses, non-profits, schools and public agencies in Missouri must manage tubes as hazardous waste. Households are exempt from this process. Flat-screen televisions and computer monitors, such as plasma or liquid crystal displays, or LCDs, do not have a tube.

On Jan. 29, 2007, the federal CRT rule took effect, requiring exporters to notify EPA prior to shipping broken or unbroken tubes to another country for recycling and receive written consent from the receiving country before shipments can be made. Under this rule, tubes and tube glass destined for recycling are not regulated as hazardous waste unless they fail to meet specific storage and processing requirements or are used in a manner constituting disposal. The purpose of the CRT rule is to increase collection and recycling. By doing this, the amount of lead in landfills will be reduced and can be reused to make new tube glass or sent to lead smelters.

Glass-to-Glass Recycling: Glass-to-glass recycling refers to the closed loop recycling process of reclaiming leaded tube glass from end-of-life tubes to make new tube glass. Glass-to-glass recycling involves collecting televisions and monitors and carefully removing the tubes. They are then shipped to specialized facilities where they are crushed and the glass is separated from the non-glass material. The leaded glass is then ground into a powder and processed to meet certain specifications. The powder is resold to manufacturers and used as an ingredient to manufacture new tube glass. There are no Missouri facilities recycling leaded tubes in this manner.



Smelting Flux: As CRTs are replaced by LCD and plasma technology, the market for glass-to-glass recycling becomes limited. The Doe Run Company recycles the ground leaded glass as flux in their smelting operation. Lead smelting is the process of using heat and a chemical reducing agent, such as petroleum coke or other source of carbon, to free the elemental lead from the lead compound. Because lead ore and other lead-bearing materials are often not pure lead, fluxing agents, such as limestone or the ground leaded glass, are used to react with the impurities and carry them off as slag. The Doe Run Company grinds the tubes at their Viburnum facility and ships it to their Buick Resource Recycling Facility to be used in their secondary smelter.

Other Lead-Bearing Materials

Lead can also be recycled from sources other than lead acid batteries or tubes. Scrap lead from lead pipes and sheets can be melted and refined without the need for a smelting stage. However, scrap lead from cable coverings, solder from circuit boards, contaminated soil and other lead-bearing metals is often contaminated with dirt and impurities such as copper, tin, antimony and arsenic. Lead from these sources can still be recycled by smelting and refining.

Advantages to Lead Recycling

Scrap lead can be collected with far less disruption and environmental impacts associated with mining and processing raw lead from ore. Recycling lead requires 35 to 40 percent of the energy needed to produce lead from ore. By properly recycling waste products containing lead, we can both reduce the amount of waste sent to our landfills and prevent lead from polluting our soil, water and air.

Contaminants of all sorts are found in Superfund sites across Missouri. Many of these have long, scientific-sounding names. But one contaminant has prompted more cleanups, required more resources and dominated more internal and external discussions than any other. It is a simple, four-letter word: lead.

The following are examples of how the Superfund section deal with lead on a regular basis.

St. Joe State Park

St. Joe State Park is located in the heart of the old “Lead Belt” of southeast Missouri where much of the nation’s lead ore was extracted for more than a century. In 1972, the St. Joe Minerals Corp. ceased operations and the land was donated to the state in 1976. Today, the 8,238-acre St. Joe State Park is Missouri’s third largest state park, with approximately 2,000 acres set aside as the state’s premier off-road vehicle riding area.

Part of the park is known as the Federal Mine Tailings Site, which is part of the larger Big River Mine Tailings/St. Joe Minerals Corp. site and is on the National Priorities List.

A state park located on a superfund site can bring challenges, but through communication and coordinating, these challenges can often be anticipated and either avoided or lessened.

In November 2009, Superfund staff met with state park and other department staff in preparation for an open house. The open house was held to highlight recent developments and for the Division of State Parks to receive public comments about services and amenities offered at the park.

The Hazardous Waste Program developed maps of trails where elevated levels of lead are located in the off-road vehicle riding area. Several trail riders groups attended the meeting and asked questions about possible restrictions in the riding area.

While this is an EPA led project, the department provides management assistance, comments on documents and maintains contact with its federal environmental counterparts. The park has two completed superfund related cleanups with additional cleanup activities being planned.

Future work includes covering sections of trail with elevated lead levels with clean material. Areas prone to erosion will also be stabilized.

Signs are posted throughout the park describing the potential risk and a lead exposure advisory is printed on the front of each permit required for riders to use the off-road vehicle portion of the park. The Department of Natural Resources continually looks for opportunities to make any needed health and safety improvements to the park to ensure visitor safety while continuing to make this recreational opportunity available.


LEAD EXPOSURE AND ST. JOE STATE PARK

St. Joe State Park is located within the Old Lead Belt, an area where much of the nation's lead ore was once mined. Evidence of past mining operations can be seen throughout the park, including the mine tailings area that is now used for off-road-vehicle riding, fishing and swimming.


The Missouri Department of Natural Resources has conducted a variety of tests to determine if exposure to the lead in the mine tailings poses a health risk to park users. To date, test results indicate there may be some health risk to children six and younger, but that recreational use in the mine tailings area should not pose an unacceptable health risk to adults. Potential health risks continue to be assessed. The public should use reasonable care when in the park to minimize exposure to tailings.

TO REDUCE RISK OF EXPOSURE

- wash face and hands before eating
- children six and younger should not play in the tailings (sandlike material in beaches, ORV areas and other locations in the park.)
- wash tailings off toys, clothing, vehicles, ORVs, etc. before returning home



For more information on lead mining and lead exposure, visit Missouri Mines State Historic Site, located adjacent to St. Joe State Park. Brochures on lead exposure also are available at the park office in St. Joe State Park.

 Missouri Department of Natural Resources

Posters like this are on display at St. Joe State Park.

Missouri received approximately \$5.3 million as part of largest environmental bankruptcy settlement.

In December, the department announced the nation's largest environmental bankruptcy resulted in Missouri receiving approximately \$5.3 million. American Smelting and Refining Company LLC, or ASARCO, one of the nation's largest copper producers, filed for bankruptcy in 2005. The company operated lead and zinc mines in the Tri-State Mining District and Southeast Missouri Lead Mining District in Missouri for hundreds of years. The historical mining and smelting practices at these two mining districts resulted in lead, zinc, arsenic and other heavy metal contamination in groundwater, Missouri's wildlife, aquatic environments and supporting habitats. A natural resource damage bankruptcy claim was filed and a settlement reached with the company. The settlement covers groundwater injuries in Tri-State Mining District and past assessment costs and future operation and maintenance costs in both mining districts.

The \$5.3 million was deposited into the state's Natural Resource Protection Fund and Hazardous Waste Fund. Approximately \$1.5 million will reimburse past natural resource damages assessment costs and fund future operation and maintenance in the Southeast Missouri Lead Mining District, while approximately \$2.1 million will reimburse and fund the same items in the Tri-State Mining District. Approximately \$1.7 million will be used to restore groundwater injured by the past mining practices in Tri-State Mining District. Natural resource damages recoveries pursuant to the Comprehensive Environmental Response, Compensation and Liability Act are to be used to "restore, replace, rehabilitate or acquire the equivalent of the injured natural resources."

In addition to the state settlement, the department and the U.S. Department of the Interior, U.S. Fish & Wildlife Service received approximately \$61 million to restore, replace, rehabilitate or acquire the equivalent of the injured natural resources in Missouri within the two mining districts. These funds were deposited in the U.S. Department of the Interior's Restoration Fund to be jointly administered by the state and federal government.

The department's Natural Resource Damages Program Coordinator Frances Klahr is charged with assessing injuries and restoring public natural resources injured by environmental hazards. These hazards include oil discharges, hazardous substances releases and pollutants. Missouri's public lands, waters and living resources are held in "trust" for the benefit of the citizens of the state. Citizens have the right to use and enjoy natural resources and states have the duty and responsibility to protect these resources.

More information about the department's Natural Resources Damages program, including reports that detail natural resources' injuries in the Tri-State Mining District and the Southeast Missouri Mining District, is available on the department's Web site at dnr.mo.gov/env/hwp/sfund/nrda.htm.

Missouri Department of Natural Resources - Hazardous Waste Program Superfund Section

Wrap up

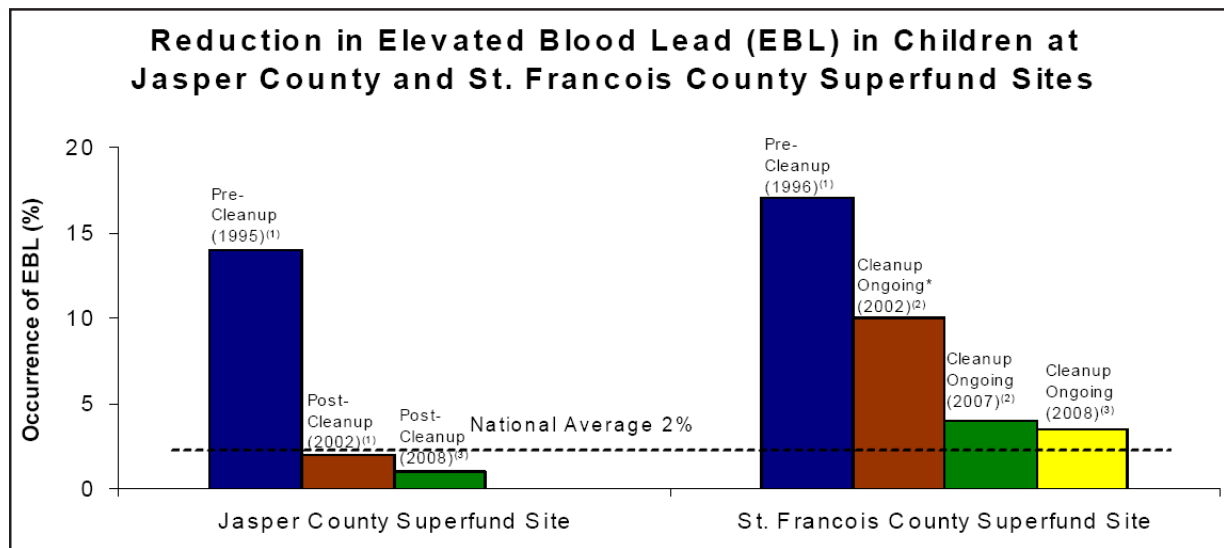
All of the areas contaminated from lead mining in Missouri could exceed any other state's total acres of Superfund sites. It's an enormous challenge for the Missouri Department of Natural Resources. While these sites contain other heavy metal contamination such as zinc and barite, lead is the main contaminate of concern for human health issues.

The Environmental Protection Agency has estimated the cost to clean up all the lead mining and smelter sites in Missouri is \$1.345 billion.

Missouri has nine sites on the National Priorities List for lead contamination. These sites represent tens of thousands of acres of lead contamination. Many of Missouri's mining sites do not have a responsible party, meaning EPA and the state would be responsible for funding the cleanup.

While the challenge may seem daunting, the department's Superfund section, with assistance from EPA and the Department of Health and Human Services, has made remarkable steps forward in protecting Missouri's citizens and environmental resources.

In Fiscal Year 2009, nearly 6,000 residential yards were cleaned up. This means parents living in these communities no longer have to worry about lead exposure while their children are playing in the front yard or the neighborhood park.



Tanks Expand Training at the Missouri Waste Coalition Conference

In 2007, the Tanks Section held the first Tanks Conference and had over 100 participants. The next year, the Tanks Section joined the Missouri Waste Coalition Conference, or MWCC, and presented a one day remediation workshop. Joining the conference helped the section reduce costs while still providing information to a large group of interested participants.

2010 MWCC will be held June 20 -22 in Lake of the Ozarks

This year, the Tanks Section and the Compliance and Enforcement's Petroleum Storage Tank Enforcement Unit will expand their role in the conference and add an additional day-long seminar about underground storage tank compliance and inspection issues. This will be a joint effort with several larger tank owners and the department.

The workshop will provide underground storage tank information to private consultants and, tank owners, laboratories, equipment companies, the public and others. The Tanks Section will also have an information booth as part of the conference. EPA is also participating as an exhibitor and a support role.

Petroleum Storage Tanks Calendar Year 2009 Statistics

During calendar year 2009, the department accomplished the following work related to petroleum storage tanks:

- Properly closed 395 tanks.
- Reviewed 167 closure reports.
- Approved 141 closure notices.
- Conducted nine site investigations.
- Responded to 11 emergencies involving petroleum releases.
- Oversaw completion of 233 remediation sites.
- Issued 944 certificates of registration.
- A total of 172 new releases were reported during calendar year 2009. Twenty-three of these releases were opened to be addressed with funding received from the ARRA.
- Department staff were notified of 42 new installations at tank sites and received 80 new site registrations.
- Compliance and Enforcement Section staff resolved 128 cases involving violations.
- At the end of the 2009 calendar year, there were 343 active enforcement cases.
- Financial responsibility compliance was at 98 percent. This number reflects insurance coverage from both the Petroleum Storage Tank Insurance Fund and other private policies and statements.
- The department currently regulates 3,634 facilities with 9,635 active underground storage tanks.

Annual Petroleum and Convenience Store Association Exposition

Staff from the Tanks Section attended the Petroleum & Convenience Store Exposition of Mid-America, or PACE, in Branson on Feb. 19 and 20. PACE is the premier midwest tradeshow with more than 4,000 attendees from seven states. This regional tradeshow attracts many key industry leaders and features the latest in petroleum and convenience store products, tank system equipment, hardware, softgoods, technology and the hottest new trends and services.

Staff had a chance to meet and inform members of the industry in an informal setting. Materials displayed included the *Missouri Resources* Magazine, a variety of the department's information about underground storage tank management, flyers to announce compliance training at the MWCC and a new listserv for tank owners. Many questions were answered, policies discussed and even a few compliments received.

Staffing the booth was Closure and Technology Unit Chief Chris Veit. Two Compliance and Enforcement staff members made a day trip to the event.

Missouri Department of Natural Resources - Hazardous Waste Program Tanks Section

Abandoned Underground Storage Tank Sites to Benefit from Recovery Act Funding

On downtown corners across Missouri, there are unoccupied vacant buildings because of what is usually buried a few feet below ground: abandoned underground petroleum storage tanks.

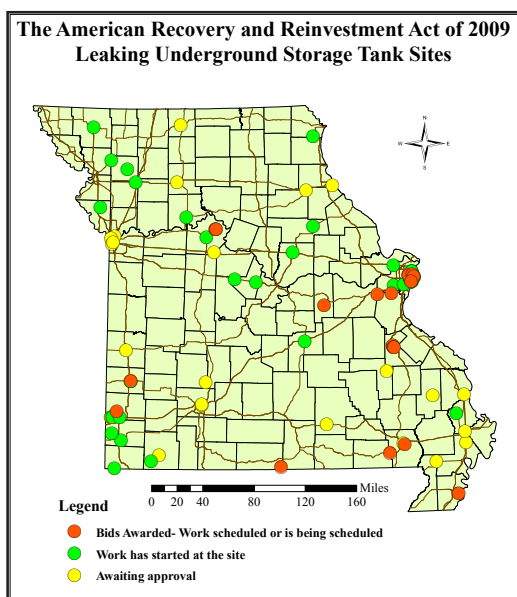
Before these properties may become occupied again, they need to be assessed to determine the proper cleanup action. Many of these sites do not have responsible parties or any funding to address the contamination; therefore, this project will allow the state to clean up sites that may otherwise lie vacant for years. The department has received more than \$3 million through the American Recovery and Reinvestment Act to address these properties. The department is assessing and cleaning up abandoned underground petroleum storage tanks sites allowing the areas to once again become an economically viable and functional part of local communities.



Many underground storage tank sites across Missouri are benefitting from the Tanks section distribution of ARRA funds.

The department is partnering with Missouri communities and property owners to help identify abandoned gas station sites for investigation and cleanup activities. When selecting sites to benefit from the Recovery Act funds, the department is also taking into consideration the planned or potential future use for abandoned underground storage tank sites. The department is committed to using the Recovery Act funds to provide a positive economic impact, so sites where there is potential for reuse and redevelopment, including the creation of jobs, will be given a higher priority than sites where there is not a redevelopment plan. Several Recovery Act videos are posted on the department's YouTube channel at www.youtube.com/missouridnr.

Abandoned underground storage tanks pose environmental threats and economic development barriers for the redevelopment and reuse of properties. Because of real or perceived contamination at these sites, developers, banks and other lending institutions are hesitant or unwilling to invest in the property. Distribution of the Recovery Act funds by the departments' tanks section will help to remove those barriers at a number of potentially contaminated sites.



Assessing and cleaning up the sites will not only provide economic stimulus to the consultants and subcontractors doing the physical tank work, but will have farther reaching and sustainable positive economic impacts. Future redevelopment of the sites can spur the creation of jobs, expand existing businesses, create new businesses and clear the way for communities to redevelop and reuse these properties.

At the time of this writing, the Tanks Section has obligated more than \$1 million of this funding to projects at abandoned sites throughout Missouri. Consultants, along with department staff, have been out in the field in January and February conducting investigation and cleanup projects at approximately 45 different properties.

Missouri Department of Natural Resources - Hazardous Waste Program
Tanks Section

Petroleum Storage
Tanks Regulation
December 2009

| Staff Productivity | Jul-09 | Aug-09 | Sep-09 | Oct-09 | Nov-09 | Dec-09 | Jan-10 | Feb-10 | Mar-10 | Apr-10 | May-10 | Jun-10 | TOTAL |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Documents received for review | 236 | 234 | 208 | 261 | 190 | 215 | 0 | 0 | 0 | 0 | 0 | 0 | 1,344 |
| Remediation documents processed | 270 | 204 | 220 | 172 | 213 | 223 | 0 | 0 | 0 | 0 | 0 | 0 | 1,302 |
| Closure reports processed | 18 | 9 | 16 | 20 | 14 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| Closure notices approved | 10 | 6 | 19 | 15 | 9 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 72 |
| Tank installation notices received | 1 | 7 | 5 | 2 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| New site registrations | 3 | 6 | 1 | 3 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Facility Data | | | | | | | | | | | | | |
| Total active and closed USTs | 39,908 | 39,922 | 39,940 | 39,956 | 39,970 | 39,976 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total permanently closed USTs | 30,147 | 30,170 | 30,206 | 30,254 | 30,268 | 30,299 | 0 | 0 | 0 | 0 | 0 | 0 | |
| USTs active and temporarily closed | 9,702 | 9,692 | 9,672 | 9,646 | 9,642 | 9,635 | 0 | 0 | 0 | 0 | 0 | 0 | |
| USTs in temporary closure | 979 | 961 | 946 | 952 | 963 | 949 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total hazardous substance USTs | 393 | 395 | 395 | 395 | 395 | 395 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Facilities with active USTs | 3,664 | 3,662 | 3,656 | 3,644 | 3,640 | 3,634 | 0 | 0 | 0 | 0 | 0 | 0 | |

Closures

| Underground Storage Tanks | Jul-09 | Aug-09 | Sep-09 | Oct-09 | Nov-09 | Dec-09 | Jan-10 | Feb-10 | Mar-10 | Apr-10 | May-10 | Jun-10 | TOTAL | All Yrs |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|---------|
| Closure Reports Reviewed | 18 | 9 | 16 | 20 | 14 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | |
| Closure Notices Approved | 10 | 6 | 19 | 15 | 9 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | |
| Number of Tanks Closed (Closure NFA) | 53 | 24 | 52 | 46 | 27 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | |

Cleanup

| Underground Storage Tanks | Jul-09 | Aug-09 | Sep-09 | Oct-09 | Nov-09 | Dec-09 | Jan-10 | Feb-10 | Mar-10 | Apr-10 | May-10 | Jun-10 | TOTAL | All Yrs |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|---------|
| UST release files opened this month | 3 | 5 | 5 | 6 | 5 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 6,182 |
| UST cleanups completed this month | 18 | 13 | 17 | 10 | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 5,222 |
| Ongoing UST cleanups | 994 | 988 | 972 | 968 | 960 | 959 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Aboveground Storage Tanks | | | | | | | | | | | | | | |
| AST release files opened this month | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 428 |
| AST cleanups completed this month | 4 | 3 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 264 |
| Ongoing AST cleanups | 169 | 169 | 165 | 165 | 164 | 164 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Both UST and AST | | | | | | | | | | | | | | |
| Total release files-both UST & AST | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| Cleanups completed-both UST & AST | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 40 |
| Ongoing cleanups-both UST & AST | 29 | 29 | 28 | 28 | 28 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Unknown Source | | | | | | | | | | | | | | |
| Total release files-unknown source | 2 | 3 | 4 | 4 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 305 |
| Cleanups completed-unknown source | 1 | 1 | 2 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 160 |
| Ongoing cleanups-unknown source | 141 | 145 | 150 | 151 | 147 | 143 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Documents Processed | 270 | 204 | 220 | 172 | 213 | 223 | 0 | 0 | 0 | 0 | 0 | 0 | 1,302 | |
| *Reopened Remediation Cases | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 78 |

*Reopened Remediation Cases was added 11/18/09 - the cumulative total has been queried and a running total will be tracked/reported with the FY10 Tanks Section Monthly Reports.

Effective December 2008 tanks with unknown substance will be included in total figures. Some measures are re-calculated each month for all previous months to reflect items added or edited after the end of the previous reporting period.